CHAPTER-I
INTRODUCTION

India is one of the four major players in the vegetable oil scenario of the world next to USA, China and Brazil, being one of the important oilseed grower, oil producer, importer and exporter. The vegetable oil scenario is very complex and is greatly influenced by the market forces, conflicting interests, vagaries of weather, technology and various biotic and abiotic stresses. Oilseed crops form the second largest agricultural commodity after cereals occupying 14 per cent of the gross cropped area. These oilseeds are being cultivated mostly under rainfed conditions and support the livelihood earnings of small and marginal farmers of the arid and semi-arid ecosystems of the country (Anon., 2017a).

The bulk of vegetable oil production in India is derived from nine oilseeds; namely, groundnut, rapeseed-mustard, sesame, safflower, niger, soybean, sunflower, forming the edible group and linseed and castor, forming the non-edible group. In addition cottonseed, rice bran, seeds of some tree species, etc., are also being exploited for vegetable oils.

Nine annual oilseed crops are being cultivated in 28.52 million ha in India, with the production of 32.87 million tonnes and the productivity of 1094 kg/ha (2014-15). Our country ranks first in area under groundnut, rapeseed/mustard, sesame, safflower and castor and also in production of sesame and castor. The oilseeds account for 13 per cent gross cropped area, 3 per of Gross National Product (GNP) and 10 per value of all the agricultural commodities (2014-15). It is estimated that 14 million farmers are involved in oilseed cultivation, while one million persons are involved in processing of oilseed and oils. Groundnut is called as the ‘king’ of oilseeds. It is one of the most important food and cash crops of our country (Anon., 2017a).

1.1 GROUNDNUT CROP

Groundnut (Arachis hypogaea L.), a member of leguminaceae is one of the principle economic crops of the world ranking 13th among the food crops and 4th among important oil seed crops of the world. The groundnut seed contains 18 per cent carbohydrate and 28 per cent protein vitamins (E, K & B group), minerals (phosphorus, calcium, magnesium and potassium). It is often called as the poor man’s cashew (badami). The oil content of the seed between 45 to 55 per cent, depending on the
varieties and agro climatic conditions. The crop is cultivated between $40^\circ$N to $40^\circ$S of the quarter. Groundnut is a self-pollinated crop whereby flowers are produced above ground and, after fertilization, pegs move towards the soil, and seed-containning pods are formed and developed underneath the soil (Madhusudhana, 2014).

### 1.1.1 History of Groundnut

The cultivated groundnut or peanut originated in South America. The term arachis is derived from the Greek word "arachos", meaning a weed, and hypogaea, meaning underground chamber, i.e. in botanical terms, a weed with fruits produced below the soil surface. There are two most common names used for this crop i.e. groundnut or peanut. The term groundnut is used in most countries of Asia, Africa, Europe and Australia, while in North and South America it is commonly referred to as peanut. The term groundnut refers to the pods with seeds that mature underground; the connotation of peanut is because this crop belongs to the leguminous family which includes also other crops such as peas and beans. It is a legume crop and not related to other nuts (e.g. walnut, hazelnut or cashews). The terminology of nut is used due its unusual growing habit where flowers are formed above ground (soil) and after fertilization the gynoecium penetrates the soil and forms pods which contain seeds (kernels). In this manuscript the term groundnut will be used due its wider acceptance.

The Spaniards who explored the Southern America encountered with this nut like seed and soon after, the different varieties of groundnut started to spread around the world (Hammons, 2008).

In the first half of the 16th century, groundnut was introduced in India by the Portuguese. Groundnut grown in tropical and subtropical areas. In 1936, largest area under cultivation is South Arcot district of Madras state and ‘Indigenous’ variety is cultivated in Bombay, Madras and Mysore. In 1962, ‘Manilakottai’ is cultivated in South Arcot which means ‘Manila nut’ which is basically introduced by Philippines (Prasad et al., 2011).

It is widely grown in South India, Maharashtra and Uttar Pradesh. North Gujarat is famous for peanut cultivation. The plant is a bushy or creeping annual with the peculiar habit of ripening its fruit underground. A sandy soil is best for its cultivation. The soil must be friable so that the ripening fruit can be buried, and it must be well fertilized (Prasad et al., 2011).
1.1.2 Uses of Groundnut

Almost every part of groundnut is of commercial value. Which include groundnut oil, kernal, groundnut cake and groundnut shell. Groundnut oil is the most important product of the crop, which is used for both domestic and industrial purposes. About 80 per cent of the world groundnut production is used in extraction of edible oil.

1.1.2.1 Groundnut oil

The groundnut oil has several uses but it is mainly used as cooking oil. It is used in many preparations, like soap making, fuel, cosmetics, shaving cream, leather dressings, furniture cream, lubricants, etc. Groundnut oil is also used in making vanaspati ghee and in fatty acids manufacturing. It is also used as a medium of preservation for preparation of pickles, chutney, etc.

The groundnut oil is used in making different types of medicated ointments, plasters, syrups and medicated emulsion. It is also used to make various food preparations like butter, milk, candy and chocolate, chutney, groundnut pack, laddu, barfi (chukii), etc.

1.1.2.2 Kernels

Whole kernels are used for table purpose by frying, soaking, roasting and boiling and in different types of namkeens. Roasted groundnut is the most popular way of eating. Kernels are also used as a spice in vegetables and as sprouts for salad.

1.1.2.3 Groundnut cake

The oil cake left after the extraction of the oil is used as an animal feed or as a source of manure since it contains 7 to 8 per cent of N 1.5 per cent of P₂O₅ and 1.2 per cent of K₂O making it useful as a fertilizer. It is an important protein supplement in cattle and poultry feeds as well. The groundnut cake can also be used for manufacturing artificial fiber. The haulms (plant stalks) are fed (green, dried or silage) to the livestock (Prasad et al., 2011).

1.1.2.4 Groundnut shell

Groundnut shell has great potential for commercial use. It is used as a fuel, filler in cattle feed, hard particleboard, cork substitute, activated carbon, etc.
1.2 GROUNDNUT PRODUCTION TRENDS IN THE WORLD

Groundnut is cultivated in tropical, sub-tropical and warm temperate regions between 40°N and 40°S latitudes. Groundnut is cultivated in more than 100 countries in the world. The production is largely confined to Asian and African countries. Asian accounts for about 50 per cent of area and 60 per cent of world groundnut production (Anon., 2017a).

Worldwide groundnut production of top producing countries in year 2017 is presented in table 1.1. Groundnut occupied an area of 25.45 million hectares with the production of 42.24 million metric tonnes in world. China is the largest producer of groundnut accounting for 40 per cent of total world production followed by India 15 per cent during the year 2016. China and India, together, accounted for about 55 per cent of world groundnut production. Nigeria (7 per cent), United States of America (6 per cent), Sudan (3 per cent) Argentina (2.8 per cent), Indonesia (2.5 per cent), and Senegal (2 per cent) were the other major groundnut producing countries during the same years. In case of Area, India ranked first one with 22 percent in the World, during 2016, followed by China (19 per cent), Nigeria (10 per cent), and USA (3 per cent). However, in productivity, United States of America stood first with 4.42 MT/ha followed by China (3.58 MT/ha), Argentina (3.24 MT/ha) and Indonesia (1.84 MT/ha) during 2017.

Table 1.1 Groundnut production in world - 2017

<table>
<thead>
<tr>
<th>Countries</th>
<th>Area (Million/ ha)</th>
<th>Production (Million metric tonnes)</th>
<th>Productivity (MT/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>4.75</td>
<td>17</td>
<td>3.58</td>
</tr>
<tr>
<td>India</td>
<td>5.5</td>
<td>6.3</td>
<td>1.15</td>
</tr>
<tr>
<td>Nigeria</td>
<td>2.5</td>
<td>3</td>
<td>1.20</td>
</tr>
<tr>
<td>USA</td>
<td>0.63</td>
<td>2.58</td>
<td>4.42</td>
</tr>
<tr>
<td>Sudan</td>
<td>1.8</td>
<td>1.4</td>
<td>0.78</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.37</td>
<td>1.2</td>
<td>3.24</td>
</tr>
<tr>
<td>Indonesia</td>
<td>0.61</td>
<td>1.13</td>
<td>1.84</td>
</tr>
<tr>
<td>Senegal</td>
<td>1.10</td>
<td>1</td>
<td>0.91</td>
</tr>
<tr>
<td>Other</td>
<td>8.19</td>
<td>8.63</td>
<td>1.05</td>
</tr>
<tr>
<td>World</td>
<td>25.45</td>
<td>42.24</td>
<td>0</td>
</tr>
</tbody>
</table>

(Source: Anon., 2017b)
1.3 GROUNDNUT PRODUCTION TRENDS IN INDIA

In India, groundnut is cultivated largely in kharif season (June to October) under rainfed conditions with low input use and high pressure of insect-pests and diseases including weeds, hence, the productivity is low. In rabi season (October to March), the crop is grown on residual moisture in rice fallows with protective irrigation or in river bed areas. Summer groundnut (Feb-May) grown under assured irrigation is generally practiced with high input application with low pressure of insect-pests, diseases and weeds hence, the productivity is quite high (Anon., 2017a).

The area and production of groundnut of India from year 2007 to 2016 as shown in fig.1.1 The groundnut area and production in India was found to be highest during the year 2007 with 6292 thousand hectares and 6890 thousand metric tonnes which is followed by 6165 thousand ha in year 2008 and 6482 thousand metric tonnes during 2013. The lowest area and production was found during 2015 with 4560 thousand hectares and 4334 thousand metric tonnes during 2012. The reason for the declining trend of groundnut area is mainly change of cropping pattern and low rainfall in the last few years. During 2015 the area, production of groundnut was low due to low rainfall in India major growing state.

(Source: Anon., 2017c)

**Fig. 1.1 Area and production of groundnut**
1.3.1 **Major Groundnut Growing States of India in 2016**

The state-wise break up of area production and productivity of groundnut is presented in table 1.2. It may be noted that Gujarat, Andhra Pradesh, Karnataka and Rajasthan occupied the top four positions in area cultivated. Gujarat tops with 1.4 million hectares followed by Andhra Pradesh 1.03 million hectares, Karnataka 0.65 million hectares and Rajasthan 0.5 million hectares. But there is a slight change in the order as far as production is concerned. Gujarat tops with 34 per cent of total production followed by Rajasthan 16 per cent, Tamil Nadu 14 per cent and Andhra Pradesh 12 per cent. Though other states like Maharashtra, Madhya Pradesh, Uttar Pradesh, Odish are the important groundnut producing states. The production of groundnut per hectare is high in Tamil Nadu with 2580 kg per hectare, but it was in third place in total groundnut production during 2014-15. The yield per hectare low in major groundnut growing states of Andhra Pradesh.

**Table 1.2 State wise area, production and yield of groundnut - 2016**

<table>
<thead>
<tr>
<th>States</th>
<th>Area (Million/ha)</th>
<th>Production (Million tonnes)</th>
<th>Yield (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gujarat</td>
<td>1.4</td>
<td>2.16</td>
<td>1542</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>1.03</td>
<td>0.49</td>
<td>771</td>
</tr>
<tr>
<td>Karnataka</td>
<td>0.65</td>
<td>0.35</td>
<td>870</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>0.5</td>
<td>1.0</td>
<td>2024</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>0.31</td>
<td>0.8</td>
<td>2580</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>0.32</td>
<td>0.20</td>
<td>1063</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>0.23</td>
<td>0.22</td>
<td>1602</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>0.6</td>
<td>0.08</td>
<td>875</td>
</tr>
<tr>
<td>Odisha</td>
<td>0.07</td>
<td>0.06</td>
<td>1375</td>
</tr>
<tr>
<td>Other</td>
<td>0.19</td>
<td>0.18</td>
<td>0.947</td>
</tr>
<tr>
<td>All</td>
<td>5.3</td>
<td>5.5</td>
<td>0</td>
</tr>
</tbody>
</table>

(Source: Anon., 2017a)
1.4 GROUNDNUT PROCESSING SYSTEM

Groundnut processing is broadly classified into two main categories based on nature of the final output obtained,

- Kernel processing
- Oil processing

In oil processing, oil is the main product and cake is the by-product. As per the recent statistical data the country has about 2,50,000 ghanies, 15,000 power mill 50,000 expellers and about 400 solvent extraction plants for processing oil seed. The growth of the processing units has direct influence on the area under crops which require processing before reaching the final consumer. Thus the main thrust in future agriculture development needs to be given for expansion of different sized processing units and for efficient marketing systems according to crops in different regions. Hence, the processing units play an important role in developing the country’s economy. It also provides scope for generating employment in the agricultural field (Anon., 2017d).

1.4.1 Kernel Processing

1.4.1.1 Cleaning and sorting

It is usually done to remove sand, stalk, plant debris and any other foreign matter and shrivelled seeds from the produce.

1.4.1.2 Drying

Moisture content is usually one of the major factors in price determination of the produce. Traders usually prefer the moisture content of the produce to be around 8 per cent before decortification. However most of the produce that comes to the market has a moisture content of around 10 per cent (summer) and 12 per cent (kharif).

1.4.1.3 Decortification

Decortification of the produce involved shelling the kernels from the pods. It is one of the biggest value additions to the produce from the marketing point of you. A graded decertifies produce usually fetches a good price in the confectionary market.

1.4.1.4 Grading and bagging

Separated based on counts and bagging on the basis of market. Grade 1 and Grade 2 sent to confectionary market and Grade 3 sent to oil crushers.
Edible oil technology can be grouped into two: mechanical pressing and solvent extraction. Sometimes the latter compliments the former. For oilseeds with high oil content such as groundnut, first mechanical pressing will be applied and over 85 percent of the oil will be extracted. The remaining oil in the expeller cake will then be extracted with solvent. For some other oilseed with low oil content, solvent extraction is generally considered as the best alternative. However, the initial investment cost of solvent extraction is much higher than mechanical pressing. In addition, solvent extraction is more appropriate for large scale processing than small scale edible oil plants.

Groundnut oil production process, based on mechanical pressing technology, can be grouped in to three stages: seed preparation, pressing and crude oil refining.

The seed requires undergoing a thorough cleaning process to remove sand, stalk, plant debris and any other foreign matters by rotary or table sieve. Usually, the screening process is 5 -10 assisted by air aspiration unit. After cleaning, the seeds have to be prepared for efficient oil recovery by pressing. The stages involved are size reduction of the seeds by breaking them and then conditioning the seeds by adjusting their moisture content and temperature, while keeping the seeds hot (say 90-95ºc) for a
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period of 30-60 minute. Then the prepared seed shall be conveyed to the screw pressing machine where it is pressed by the action of worm and outer shell. The crude oil so obtained from the pressing will be first clarified in a settling tank and then shall be pumped through the filter press.

The filtered crude ground nut oil will be pumped to the refinery where it shall pass through three stages of refining: neutralization, bleaching and deodorization.

To reduce the level of free fatty acid (FFA) in the oil, caustic soda will be mixed with the crude oil. Therefore, the oil will be washed with water. It will then be pumped to the bleacher in which it will be mixed with bleaching earth to improve the color of oil by the process called adsorption. The plant requires a containment vessel for the collection and treatment of wastes to be generated in the process.

After the oil cakes obtained from expellers are cleaned to remove impurities and further fed to the Cracker Breaker to make small piece sand treated in a multistage counter-current process with solvent until the remaining oil content is reduced to the lowest possible level. Output of the toaster section at bottom is De Oil Cake (Doc) and is separately collected, conveyed and packed which is use in animal feed.

(Source: Anon., 2017e)

Fig. 1.3 Groundnut oil processing
1.5 CONSUMPTION ANALYSIS

More than half of groundnut production is crushed into oil for human consumption or industrial use. Protein meal, a by product of crushing, is an ingredient in livestock feeds. Groundnut is also consumed directly and is used in processed food and snacks.

Utilization of oil, meal and confectionary are all increasing, along with a gradual shift away from oil and meal into confectionary use. In the domestic market, the shares of these products have not changed substantially in the last decade. However, during this period there has been a significant shift towards confectionary use in some markets, notably in Indian Markets.

1.5.1 Groundnut Oil Consumption

Demand for groundnut oil is determined by a variety of factors including relative prices of competing vegetable oils, income levels, demographic trends and cultural preferences.

Groundnut oil consumption in India from year 2001 to 2016 shown in fig 1.4. Between 2001 and 2016 the India consumption of groundnut oil decreased from 1861 thousand metric tonnes to 935 thousand metric tonnes despite rising international prices. However, in the domestic market, consumption of groundnut oil has shown a substantial decline. Lowest consumption in year 2015 with 834 thousand metric tonnes.

(Source: Anon., 2017c)

Fig. 1.4 Groundnut oil consumption
1.5.2 **Groundnut Meal Consumption**

Groundnut meal is used primarily as a protein supplement in the livestock feed rations. The supply of groundnut meal is directly influenced by demand for groundnut oil, the primary product from crushed groundnut. Thus, production and price trends of meal are similar to those of oil, but with similar fluctuations across years. There is a high level of technical and economic substitutability in the market for oilseed meal; all meals can be used as livestock feed although the protein contents are different. Consequently, demand for groundnut meal depends largely on relative prices; between oilseed meals and cereal based meal substitutes on one hand and between competing oilseeds on the other hand. The increase was concentrated in the livestock sector, where consumption of meal almost doubled despite rising prices. As income rose, consumption of meat and livestock products increased, generating demand for groundnut meal.

Groundnut meal consumption of India from year 2001 to 2016 shown fig 1.5. Between 2001 and 2016 the India consumption of groundnut meal decreased from 2154 thousand metric tonnes to 1273 thousand metric tonnes. The highest fluctuation was seen during 2001 with 2154 thousand metric tonnes and lowest fluctuation was seen during the year 2015 with 1107 thousand metric tonnes.

(Source: Anon., 2017c)

*Fig. 1.5 Groundnut oil consumption*
1.6 GROUNDNUT INTERNATIONAL TRADE

The consumption pattern of the country contracts the Indian groundnut export size and does not allow it to gain dominance over the world market even though a high production level. Earlier it was an important exporter of groundnut and its by-products. But with passage of time, it lost all its importance due to its high prices and increasing competitiveness. Presently the major part of the groundnut production is consumed domestically and the rest is exported to various countries like Argentina, Brazil, Senegal, India, China, Myanmar, Nigeria and Nigeria. India produce groundnut in sufficient amount so no need of any import of product from other country but they export such product to other country.

Groundnut, groundnut oil and groundnut meal export from India during year 2011 to 2016 shown the fig 1.6 The groundnut, groundnut oil and groundnut meal export in India was found to be highest during the year 2011 with 1361 thousand metric tonnes, 22 thousand metric tonnes and 13 thousand metric tonnes which is lowest by 527 thousand metric tonnes, 4 thousand metric tonnes and 5 thousand metric tonnes during 2012. The fluctuation trade in groundnut, groundnut oil and groundnut meal.

(Source: Anon., 2017c)

Fig. 1.6 Groundnut, groundnut oil and groundnut meal export
1.7 MARKETING OF GROUNDNUT

The marketing or trade of groundnuts performs the function of assembly, transportation, brokerage, and sometimes storage in moving the produce to the mills. Trading practices of groundnuts in the early days as well as today is presented in the following sections.

1.7.1 Availability of Groundnuts

According to an estimate, about 80 per cent of the country’s production goes to in chekkus, about 10-12 per cent in seed and 6-8 per cent used as roasted nuts. Chekku is an intermediate groundnut oil extraction technology which came into existence after the traditional animal driven Ghani technology but before the advent of modern power operated oil mills. Harvest labor was paid in kind at one-tenth to one-sixth of the produce, but even this quantity was frequently sold in the market for cash. Market arrivals were October to January, and an average of 75 percent of all groundnut production was estimated to have been marketed for use in India. Nut prices were influenced by several factors. Peak prices were to be had in December and January and from June to August, and a deep harvest depression occurred from August to December, the spread being as high as 40 per cent in certain markets (Prasad et al., 2013).

1.7.2 Assembling of Groundnuts for Marketing

In India, oilseeds marketing in general and groundnut marketing in particular are mainly in the hands intermediaries like village traders, commission agents, wholesaler and oil millers. Hence, the groundnut growers are only a price receiver. Therefore, many a times they have to resort to distress sale due to uncertain situation in the marketing of oilseeds. In the process of marketing, the producer has to incur various marketing cost (Badi and Badi, 2008).

Bulk of the groundnut is sold by the farmers as pods and small percentage as kernels. Shelling of the pods is done at intermediate stages as the produce reaches the millers and exporters outside the states in the form of kernels. Shelling reduces volume and transport charges but it is disadvantageous to market the kernels as they easily and quickly undergo deterioration and spoilage. Grading of groundnut is a pre-requisite before mechanical shelling to keep the percentage of kernel breakage to a minimum. Better prices are also obtained in the market for graded pods. When groundnut is to be sown, women labourers are employed for breaking the pods and taking out the kernels.
In doing so, the tests of the kernel also get separated to a considerable extent making it useless for sowing, because such damaged kernels will not germinate. Groundnut decorticators, therefore, have been designed. About 70 to 80 per cent of the marketable surplus of groundnut pods is taken by the farmers personally to the markets (Balaji et al., 2010).

A developed market is an incentive to the producer to produce more without having any linkage of fear regarding exploitation of market margins by the market managers. Efficient marketing is essential for the well-being of the country. Efficiency and productivity of marketing are directly linked with the growth and development of the economy as a whole. Marketing, when effectively performed, contributes to the higher living standards, greater national prosperity and broader industrial expansion (Mane et al., 2014).

A marketing system is said to be efficient if the goods are moved from the primary producers to the ultimate consumers at the lowest cost consistent with the provision of the services that consumers desire. From the producer’s point of view, sale of produce at the highest possible price is considered as an efficient marketing. From the consumer’s point of view, availability of the best quality product in the most convenient form at the lowest possible price is synonymous to the efficient marketing (Prasad et al., 2013).

Marketing efficiency is generally studied in terms of marketing cost and margin known as Price-spread. Price-spread of a commodity is the magnitude of difference between the price received by the primary producer and that paid by the ultimate consumer. Obviously, this magnitude constitutes two elements viz., cost and margin (Mane et al., 2014).

1.8 COMPANY PROFILE
Vinay Industries Ltd. (VIL) is principally involved in agro-processing and trading activities with a humble beginning in 1960 at Junagadh. Initially with just a crushing unit, the company has grown with the addition of numerous state-of-the-art plants in the agro-processing sector. After establishing its first Solvent Extraction Unit in 1975, the company set up its refinery in 1976 that was updated in 1982. The crushing capacity was also doubled in 1992.
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In the year 2000 the company took over Gujarat Agro Processor, a unit of government situated at Bareja, Ahmadabad. Continuing on the growth path, the company established two new project of cotton ginning, pressing and crushing unit and a wind mill respectively in 2006 and 2007. In 2008 the company incorporated itself as a limited company thereby elevating from a Private Limited company.

“Vinay Industries Ltd.” is recognized export house based at Junagadh, Gujarat. The company is more focused on international trade i.e. exporting agricultural commodities like edible oil, industrial oil, animal feed, different oil seeds, and Indian raw cotton. Company are also importing crude palm oil and RBD (Refined, Bleached and Deodorized) palm oil. Vinay Industries Ltd. receiving award of biggest exporter of groundnut oil from IOPEPC (Indian Oilseed and Produce Export Promotion Council) in year 2011-12.

VIL is a professional manufacturer and exporter with HACCP (Harard Analysis and Critical Control), ISO (International Organization for Standardize) certificate in India, offering standard granulation and high with extremely competitive pricing. Company exports in different countries like China, Taiwan, Singapore, Indonesia, Thailand, Turkey, Russia, Kuwait, Mexico etc.

1.8.1 Vision of Company

Being identified and recognized in global market as a company with a strong brand loyal customer base.

1.8.2 Mission of Company

- To continue ensure products and process to be of the highest quality to serve our customer to their utmost satisfaction.
- To strive for continuous growth and profitability by applying innovation, new technology and new concept.

1.8.3 Products of Company

Table 1.3 shows the product detail of Vinay Industries Ltd. The products produced in Vinay Industry are groundnut oil, cotton oil, palm oil, sunflower oil, corn oil and cotton oil cake under the brands name Shree Raj, OM, Khana Khazana, Sun Vita, Corn Vita, Maldhari respectively. DOC (Di Oil Cake) and cotton bales are also produced. Packaging size varies from 0.5 ltr to 1 ton. Price of groundnut oil is higher compared to other oil and the price of palm oil is lowest.
**Table 1.3 Product detail of Vinay Industries**

<table>
<thead>
<tr>
<th>Product</th>
<th>Brand name</th>
<th>Packaging size</th>
<th>Price (April 2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundnut oil</td>
<td>Shree Raj</td>
<td>15 kg</td>
<td>2240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ltr</td>
<td>670</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 ltr</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 ltr</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ltr</td>
<td>70</td>
</tr>
<tr>
<td>Cotton seed oil</td>
<td>OM</td>
<td>15 kg</td>
<td>1210</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 ltr</td>
<td>1170</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 ltr</td>
<td>390</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 ltr</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 ltr</td>
<td>73.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ltr</td>
<td>38.50</td>
</tr>
<tr>
<td>Palm oil</td>
<td>Khana Khazana</td>
<td>15 kg</td>
<td>925</td>
</tr>
<tr>
<td>Sunflower oil</td>
<td>Sun Vita</td>
<td>15 kg</td>
<td>1180</td>
</tr>
<tr>
<td>Corn oil</td>
<td>Corn Vita</td>
<td>15 kg</td>
<td>1130</td>
</tr>
<tr>
<td>Cotton oil cake</td>
<td>Maldhari</td>
<td>44 kg</td>
<td>1100</td>
</tr>
<tr>
<td>DOC (Di Oil Cake)</td>
<td>-</td>
<td>1ton</td>
<td>24000-25000</td>
</tr>
<tr>
<td>Cotton Bales</td>
<td>-</td>
<td>165 kg</td>
<td>35000-60000</td>
</tr>
</tbody>
</table>

**1.9 PRACTICAL UTILITY OF THE RESEARCH STUDY**

Study was help to identify the factors which are responsible for making farmers more efficient regarding marketing their products and getting more returns for their produces. This will help to the producer to manage the cost of production and help to get better return through appropriate investment. Study will also determine the technical efficiency to know the optimum level of input at which profit is maximum.
1.10 OBJECTIVES OF THE STUDY

The present study was fulfilled with following objectives.

1. To analyze marketing efficiency of groundnut growers
2. To identify the factors affecting the marketing efficiency
3. To find out financial feasibility of groundnut processing unit
4. To determine the technical efficiency of groundnut oil industries

1.11 LIMITATIONS OF THE STUDY

1. This survey was restricted to Junagadh district only.
2. The sample size for the survey was limited to respondents which may not be representing the whole district.
3. The data of company was based on the information given by the staff of company.